

## **EXECUTIVE SUMMARY**

The Nuclear Engineering and Physics Programs at South Carolina State University (SCSU) are going to develop a new course in Nuclear Criticality Safety for advanced Nuclear Engineering students and a complementary course in Biological Effects/Health Physics to enhance the student's understanding of Criticality accident assessment and drill preparation. The objective is to train high potential minority students in this subject area, which is a critical skill needed across the entire nuclear industry.

The Nuclear Criticality Safety course will be developed and taught by two SCSU faculty members who have a combined 40 years of industrial experience in Nuclear Criticality Safety and Reactor Physics. The primary text for this course would be Dr. Ronald Knief's book on the subject, supplemented by the major reference documents of the field, such as LA-10860. These supplementary texts will also allow the Nuclear Engineering Program to enhance its library holdings. The Biological Effects/Health Physics course will require the development of one additional course. This new course would include introductory material on nuclear radiation detection instrumentation (necessary for an understanding of Criticality Accident Alarm Systems (CAAS) and CAAS deployment in a plant environment) as well as basic dosimetry as covered in Dr. Herman Cember's standard textbook on the subject as the course text. The target date for implementing would be fall '09-'10.